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ABSTRACT

The Technology Application Center (TAC) at the University of New Mexico is one of six National Aeronautics and Space Administration (NASA) regional dissemination centers originally established to disseminate NASA technology to private industry on a regional basis. A fee is charged for TAC's services so it has been market oriented and has sought to act as a catalyst between users and suppliers of technological information. There are five programs at TAC, an industrial program, an energy information program, a business and industry extension program, a remote sensing program, and a center for environmental research and development. At the heart of TAC is a full service information center which supports the five programs and also provides a computerized literature search to faculty members at the University of New Mexico. (WH)

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Information and Library Programs at the Technology Application Center (TAC).

SPEECH PRESENTED AT THE SOUTHWESTERN LIBRARY ASSOCIATION ON OCTOBER 16, 1974, AT GALVESTON, TEXAS, BY EUGENE BURCH, ASSISTANT DIRECTOR OF OPERATIONS, ~~TECHNOLOGY~~ APPLICATION CENTER, UNIVERSITY OF NEW MEXICO, ALBUQUERQUE, NEW MEXICO

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I'M EXTREMELY HAPPY TO BE WITH YOU AND TO HAVE THE OPPORTUNITY TO TELL YOU SOME THINGS ABOUT THE TECHNOLOGY APPLICATION CENTER, USUALLY REFERRED TO AS TAC, AND DISCUSS SOME PROGRAMS CURRENTLY BEING CONDUCTED IN THE INFORMATION AND LIBRARY FIELDS.

TAC IS ONE OF SIX NASA REGIONAL DISSEMINATION CENTERS ORIGINALLY ESTABLISHED TO DISSEMINATE NASA TECHNOLOGY TO PRIVATE INDUSTRY ON A REGIONAL BASIS. LOCATED AT THE UNIVERSITY OF NEW MEXICO, TAC HAS BEEN IN BUSINESS NINE YEARS, SERVING THE REGION WEST OF THE MISSISSIPPI EXCEPT FOR THE WEST COAST STATES. GIVEN THE REQUIREMENT BY NASA TO CHARGE A FEE FOR OUR SERVICES, TAC QUICKLY BECAME MARKET ORIENTED, AND, IN RESPONDING TO THE NEEDS OF THE MARKET PLACE, HAS GROWN IN SEVERAL WAYS. FIRST, WE EXPANDED OUR INFORMATION DISSEMINATION CAPABILITY TO INCLUDE ALL TECHNOLOGY, NOT JUST NASA'S. IN THE LAST TWO YEARS WE HAVE DEVELOPED A TOTAL INFORMATION CENTER CAPABILITY INCLUDING INFORMATION SERVICES IN THE SOCIAL, BUSINESS, ECONOMICS AND EDUCATIONAL SCIENCE. SECONDLY, TAC HAS BROADENED THE USER COMMUNITIES IT SERVES WHICH NOW, IN ADDITION TO THE INDUSTRIAL SECTOR, ALSO INCLUDE STATE AND LOCAL GOVERNMENTS, UNIVERSITITES, AND EVEN FEDERAL AGENCIES. THIRD, IT HAS ADDED A NUMBER OF TECHNOLOGY TRANSFER METHODS TO THE INFORMATION DISSEMINATION APPROACH INITIALLY USED, AND THROUGH THIS PROCESS HAS SPECIALIZED IN SEVERAL AREAS OF TECHNOLOGY. TODAY TAC HAS A FULL-SERVICE

INFORMATION CENTER AND FIVE PROGRAMS. THESE ARE:

THE INDUSTRIAL PROGRAM

THE ENERGY INFORMATION PROGRAM

THE BUSINESS AND INDUSTRY EXTENSION PROGRAM

THE REMOTE SENSING PROGRAM

AND

THE CENTER FOR ENVIRONMENTAL RESEARCH AND DEVELOPMENT

TO ADDRESS THESE PROGRAMS BRIEFLY LET ME BEGIN WITH THE INDUSTRIAL PROGRAM.

THE INDUSTRIAL PROGRAM SERVES THE INDUSTRIAL COMMUNITY IN TAC'S REGION, AND ALSO NUMEROUS OTHER USERS OF TECHNOLOGY INCLUDING STATE AND LOCAL GOVERNMENTS. THIS IS TAC'S OLDEST PROGRAM AND THE ONE IN WHICH THE MOST SIGNIFICANT CHANGES HAVE TAKEN PLACE OVER THE YEARS. TODAY OUR CLIENTS FREQUENTLY ASK FOR EVALUATION AND CONSULTATION BEYOND THE INITIAL IDENTIFICATION AND CITING OF PUBLISHED OR REPORT INFORMATION. TAC WELCOMES THESE OCCASIONS BECAUSE THEY OFFER THE OPPORTUNITY TO BECOME MORE DEEPLY INVOLVED IN <u>OUR BASIC MISSION</u>, <u>THAT OF TRANSFERRING TECHNOLOGY INTO BENEFICIAL USE</u>. A GOOD EXAMPLE OF THIS INVOLVED TAC'S BRINGING TOGETHER THE COMPANY/BUILDING THE ALASKAN PIPELINE, THE ALYESKA PIPELINE SERVICE COMPANY, WITH EXPERTS IN HEAT PIPE TECHNOLOGY FROM THE GODDARD SPACE FLIGHT CENTER OF NASA. THE ALYESKA COMPANY PLANNED TO USE

HEAT PIPES TO STABLIZE THE PERMAFROST ALONG SECTIONS OF THE PIPELINE AND WERE INTERESTED IN HAVING OUTSIDE EXPERTS REVIEW THESE HEAT PIPE DESIGNS. IN THIS INSTANCE, TAC WAS INSTRUMENTAL IN SUPPLYING THE CATALYST BETWEEN ALYESKA AND GODDARD.

THE ENERGY INFORMATION CENTER PROGRAM IS A JOINT EFFORT WITH UNM'S SCHOOL OF ENGINEERING, BROUGHT INTO BEING TO PROVIDE ENERGY INFORMATION AND RESEARCH SERVICES TO A WIDE AUDIENCE. ITS FIRST COMPREHENSIVE SURVEY OF EI TECHNOLOGY--COVERING HYDROGEN AS AN ENERGY SOURCE--WAS PUBLISHED IN JANUARY OF THIS YEAR, AND IS BEING MARKETED NATIONALLY. WORK IS NOW ALMOST COMPLETED ON A SIMILAR SURVEY OF SOLAR ENERGY TECHNOLOGY. IN ADDITION, THE ENERGY INFORMATION CENTER HAS SEVERAL PROPOSALS UNDER CONSIDERATION WHICH ARE INTENDED TO DEVELOP A PROFILE OF ENERGY USERS AND CONSUMPTION IN NEW MEXICO AND THE ROCKY MOUNTAIN SOUTHWEST, AND TO ASSESS THE POTENTIAL FOR BOTH INTERIM AND LONG-RANGE ENERGY CONSERVATION METHODS WHICH MIGHT BE INSTITUTED.

ANOTHER PROJECT OF CONSIDERABLE SIGNIFICANCE INVOLVES A NUMBER OF STATE-OF-THE-ART REVIEWS ON ENERGY-RELATED SUBJECTS BEING PREPARED FOR THE NASA LEWIS RESEARCH CENTER IN CLEVELAND. AMONG THE AREAS OF INTEREST TO LEWIS ARE:

SOLAR HEATING AND COOLING OF BUILDINGS

WIND ENERGY

ENERGY STORAGE MECHANISMS

TURBINE APPLICATIONS IN POWER GENERATION

DEEP COAL TECHNOLOGY

GEOTHERMAL ENERGY

TRANSPORTATION PROPULSION SYSTEMS

COAL GASIFICATION & LIQUEFACTION

OIL SHALE EXTRACTION & PROCESSING

AND

WASTE HEAT UTILIZATION

JUST TO NAME A FEW.

TAC'S BUSINESS AND INDUSTRY EXTENSION PROGRAM IS A NEW PROGRAM FUNDED BY AN APPROPRIATION FROM THE NEW MEXICO STATE LEGISLATURE. ITS GENERAL OBJECTIVE IS TO ACHIEVE A LEVEL OF DISSEMINATION AND APPLICATION OF TECHNICAL AND SCIENTIFIC KNOWLEDGE THAT WILL AID IN A GENERAL AND ORDERLY EXPANSION OF THE NEW MEXICO ECONOMY. THE BUSINESS AND INDUSTRY EXTENSION PROGRAM PURSUES THIS GOAL BY ENCOURAGING USE OF ALREADY DEVELOPED TECHNOLOGY WHICH APPEARS PROMISING FOR NEW MEXICO USE; BY PROMOTING USE OF NEW TECHNOLOGY THAT WILL AID EXISTING INDUSTRY TO BECOME MORE EFFICIENT AND COMPETITIVE; AND, BY ENCOURAGING DEVELOPMENT OF INDUSTRIAL ACTIVITY APPROPRIATE TO THE NEEDS OF THE STATE.

OUR REMOTE SENSING PROGRAM IS INVOLVED IN ALL PHASES OF EARTH RESOURCES SURVEY TECHNOLOGY, WITH PARTICULAR EMPHASIS ON

THE APPLICATION OF THIS TECHNOLOGY BY THE UNITED STATES GOVERNMENT COMMUNITY. A SIGNIFICANT STUDY FOR THE NASA OFFICE OF APPLICATIONS WAS MADE LAST SUMMER OF THE POTENTIAL OF REMOTE SENSING TO RESPOND TO THE NEEDS AND PROBLEMS OF STATE GOVERNMENTS IN THE AREAS OF NATURAL RESOURCE MANAGEMENT AND LAND-USE PLANNING. ANOTHER STUDY DEALT WITH THE APPLICATION OF ERTS IMAGERY TO GEOLOGIC MAPPING AND EXPLORATION IN NEW MEXICO. AND, RECENTLY, AT THE REQUEST OF THE LAND USE ADVISORY COUNCIL OF THE NEW MEXICO STATE LEGISLATURE, TAC CONDUCTED A JOINT PROGRAM WITH NEW MEXICO STATE UNIVERSITY IN WHICH THE STRUCTURE OF A COMPUTER-BASED LAND-USE INVENTORY AND MAPPING SYSTEM FOR NEW MEXICO WAS EXPLORED AND AN INITIAL INVENTORY SYSTEM DESIGN PROJECT PROPOSED.

THE LAST OF THE FIVE TAC PROGRAMS IS THE CENTER FOR ENVIRONMENTAL RESEARCH AND DEVELOPMENT, OFTEN REFERRED AS CERD. THIS PROGRAM HAS A BROAD INTEREST IN NATURAL RESOURCE MANAGEMENT, ENVIRONMENTAL DESIGN, AND LAND-USE PLANNING, AND HAS PARTICIPATED WITH THE REMOTE SENSING PROGRAM IN BOTH THE STATE-NEEDS STUDY AND THE LAND USE ADVISORY COUNCIL STUDY. CERD HAS CONSIDERABLE EXPERIENCE BOTH IN ENVIRONMENTAL IMPACT STUDIES FOR INDUSTRY AND IN REGIONAL ENVIRONMENTAL PROGRAMS SUCH AS THOSE SPONSORED BY THE EISENHOWER FOUNDATION. ANOTHER MAJOR EFFORT OF CERD IS A COMPREHENSIVE SURVEY OF

LAND-USE PLANNING INFORMATION WHICH IS PLANNED FOR NATIONAL PUBLICATION IN THE NEAR FUTURE.

THE INFORMATION CENTER, WHICH IS THE OPERATIONAL HUB OF TAC, AND OF WHICH I AM MANAGER, PROVIDES SUPPORT FOR ALL OF THE AFORE MENTIONED PROGRAMS. IN ADDITION TO THIS MAJOR RESPONSIBILITY, THE INFORMATION CENTER IS CURRENTLY INVOLVED IN A JOINT TAC/UNIVERSITY OF NEW MEXICO LIBRARY PROGRAM WHICH PROVIDES A COMPUTERIZED LITERATURE SEARCH SERVICE TO FACULTY MEMBERS. BEGAN AS AN EXPERIMENTAL PROGRAM THIS PAST FISCAL YEAR, THIS SERVICE HAS BEEN SO WELL RECEIVED THAT IT HAS BEEN RENEWED FOR FY75. IT IS LARGELY DUE TO THIS LIBRARY PROGRAM THAT TAC ACQUIRED THE BROAD INFORMATION BASES AND SOURCES WHICH GO FAR BEYOND THOSE IN THE PHYSICAL AND ENGINEERING SCIENCES TRADITIONALLY SEARCHED. I SHOULD LIKE TO GO INTO THE TAC/UNIVERSITY PROGRAM IN GREATER DEPTH BECAUSE I FEEL IT MAY BE OF SPECIAL INTEREST TO THIS PARTICULAR AUDIENCE.

IN OUR RAPIDLY CHANGING SOCIETY, UNPREDICTABLE CURRENT EVENTS GENERATE SITUATIONS THAT CALL FOR QUICK RESPONSE FROM SCHOLARS.....SOMETIMES MOVING THEM INTO FIELDS OUTSIDE THEIR AREA OF EXPERTISE. THEY OFTEN NEED A RAPID COMPREHENSIVE OVERVIEW OF THE LITERATURE IN THEIR FIELD TO BUILD UPON, TO AVOID COSTLY DUPLICATION OF TIME AND EFFORT IF THE WORK HAS ALREADY BEEN REASEARCHED. TAC'S COMPUTERIZED INFORMATION SERVICES

CAN ADD A NEW DIMENSION TO THE UNIVERSITY LIBRARY REFERENCE DEPARTMENT'S TRANDITIONAL SERVICES, AIDING THE LIBRARIAN AND THE RESEARCHER IN COPING WITH THE "INFORMATION EXPLOSION" AND THE INCREASINGLY MULTIDISCIPLINARY NATURE OF KNOWLEDGE.

AT THIS TIME, THE UNIVERSITY OF NEW MEXICO'S GENERAL LIBRARY PROVIDES FREE SEARCHES OF INFORMATION STORED ON TAC'S COMPUTERIZED INFORMATION BASES TO THE FACULTY ON A FIRST-COME, FIRST-SERVE BASIS WITHIN THE LIMITS OF THE APPROVED BUDGET. THE PRODUCT OF THE SERVICE IS A PRINTED BIBLIOGRAPHY WITH ABSTRACTS. ONE COPY IS ADDED TO THE GENERAL LIBRARY COLLECTION AND A SECOND COPY IS SENT TO THE PROFESSOR WHO REQUESTED IT.

A WRITTEN AGREEMENT BETWEEN THE UNIVERSITY GENERAL LIBRARY AND TAC GIVES THE LIBRARY THE PRIVILEGE OF SHARING THE USE OF FIFTY-TWO (52) COMPUTERIZED INFORMATION BASES AVAILABLE TO TAC WITHOUT THE ENORMOUS EXPENSE OF BUYING AND MAINTAINING SUCH A LARGE NUMBER OF BASES. SINCE TAC IS CONTINUALLY ADDING MORE BASES, THE UNIVERSITY LIBRARY IS ABLE TO PROVIDE A SIGNIFICANTLY HIGHER LEVEL OF REFERENCE SERVICE IN LESS TIME, WITHOUT INCREASING THE SIZE OF ITS STAFF.

THE PROCEDURE FOR USING THE UNIVERSITY LIBRARY/TAC SEARCH SERVICE IS QUITE SIMPLE. THE FACULTY MEMBER PROVIDES A WRITTEN REQUEST TO THE REFERENCE DEPARTMENT. THE REFERENCE

DEPARTMENT ASSIGNS A SEARCH CONTROL NUMBER TO THE REQUEST AND APPROVES EXPENDITURE OF NECESSARY FUNDS. A PRE-CONFERENCE IS ARRANGED EITHER IN PERSON OR IN A TELEPHONE CONFERENCE WITH THE FACULTY REQUESTER, THE REFERENCE LIBRARIAN AND A QUALIFIED INFORMATION SPECIALIST ON TAC'S STAFF. THIS CONFERENCE PROVIDES THE STAGE FOR CLARIFYING THE SEARCH PARAMETERS, ELICITS KEY OR SUBJECT SEARCH TERMS, FINDS AGREEMENT ON APPROPRIATE BASES AND DURATION OF YEARS TO BE SEARCHED AND DEFINES AREAS OR REFERENCES NOT TO BE INCLUDED. FROM THIS POINT, TAC DEVELOPS THE STRATEGY AND LOGIC FOR EITHER BATCH OR INTERACTIVE SEARCHES, CONDUCTS THE COMPUTERIZED SEARCHES, ACCEPTS AND ORGANIES THE COMPUTER OUTPUT, PREPARES A SYNOPSIS OF FINDINGS, REPRODUCES TWO COPIES, ATTACHES BLANK EVALUATION FORMS, AND FORWARDS BOTH COPIES TO THE REFERENCE DEPARTMENT. THE COMPLETED EVALUATION FORMS PROVIDE NEEDED FEEDBACK TO TAC ON ITS QUALITY OF FURNISHED MATERIAL, FORMAT AND SATISFACTION WITH THE TURNAROUND TIME. TO DATE, TAC HAS PROCESSED 150 FACULTY REQUESTS INITIATED FROM 27 ACADEMIC DEPARTMENTS.

HOPEFULLY ALL OF YOU HAVE FOUND A TAKE-HOME FOLDER IN YOUR RESPECTIVE CHAIRS. THE FOLDER CONTAINS A BRIEF DESCRIPTION OF TAC'S PROGRAMS, AVAILABLE INFORMATION BASES, FACULTY/LIBRARIAN/TAC LITERATURE SEARCH PROCEDURES, A FACULTY LETTER OF EVALUATION AND A FORM

FOR REQUESTING ADDTIONAL IINFORMATION OR ORDERING AVAILABLE PUBLICATIONS.

I AM SURE WE CAN ALL UNANIMOUSLY AGREE THAT IT IS NOT NECESSARY TO HAVE ALL OF THE WORLD'S INFORMATION WITHIN THE WALLS OF ANY LIBRARY. HOWEVER, IT IS ESSENTIAL TO HAVE BIBLIOGRAPHIC ACCESS TO THAT INFORMATION....TO KNOW THAT IT EXISTS AND WHERE IT CAN BE OBTAINED. TAC, THROUGH ITS VARIED PROGRAMS, ATTEMPTS TO FILL THIS NEED ECONOMICALLY AND EFFICIENTLY. EACH OF YOU IS INVITED TO SERIOUSLY CONSIDER HOW TAC MIGHT ASSIST IN SUPPORTING YOUR RESEARCH AND TEACHING INFORMATION NEEDS. I FEEL CERTAIN TAC CAN SAVE YOU TIME AND MONEY BY UTILIZING ONE OR MORE OF THE PROGRAMS I HAVE BEEN DISCUSSING.

THANK YOU.....